Instruction Manual O8386-EN

Autonomous operation of Vario-5 switching unit

1 Purpose

This instruction serves as guideline for installation and application of the switching unit Vario-5 in autonomous operation. It serves as a supplement to the operating instructions for the Vario-5 switching unit.

2 Autonomous operation

The switching unit Vario-5 is not integrated into the operation of a Thermo-5 single unit or Panel-5 operating unit and may be operated independently. The functions are very limited in this.

Autonomous operation may be used for the following applications:

- use of several switching units in a temperature-variable system
- use of third-party unit/s instead of Thermo-5 units
- test purposes (review procedure of the step motors)

Requirement

The following prerequisites are needed in order to operate a switching unit Vario-5 autonomously:

- Switching unit as of serial number 710-nnnn
- Software version as of SW51-2_1844
- Direct actuation with 2 contacts for "Vario Heating" and "Vario Cooling".

Actuation

In order to transfer signals to control the switching unit, the control cable must be connected to the socket Ext. Control.

For control, one signal each per heating and cooling is required. The switching unit conducts the commands directly and without delay.

NOTICE!

If the two commands are issued at the same time, the known command is executed first.

Recognition autonomous operation at mains ON

Autonomous operation is recognised via the digital input 'Operation autonom' by the control cable. If this contact is closed at mains ON, the switching unit is in autonomous operation. With the contact open, operation takes place via a single unit Thermo-5 or operating module Panel-5.

NOTICE!

The pin unit of the control cable is listed in the chapter 3 on page 5.

Operating mode

Autonomous operation switches between hot and cold temperature adjustment medium, controlled by the machine signals. If the machine signals are not issued, the system is in the defined operating status "Vario Neutral".

→ As soon as the signals are available, switching between "Vario Heating" and "Vario Cooling" is enabled.

Energy buffer

Control of the energy buffer is controlled in autonomous operation and is controlled automatically.

If the control of the energy buffer is turned off (buffer valve "To"), the contact 'Energy buffer' of the digital input of the control cable must be closed.

NOTICE!

The pin unit of the control cable is listed in the chapter 3 on page 5.

Status display switch over unit

In autonomous operation status, the status lamp (HL 1) is lit as follows:

Display	Description
OFF	Network not available
Alternatively 2x flashes 0,25 s and 2x flashes 1 s	Autonomous operation active

Software-Update

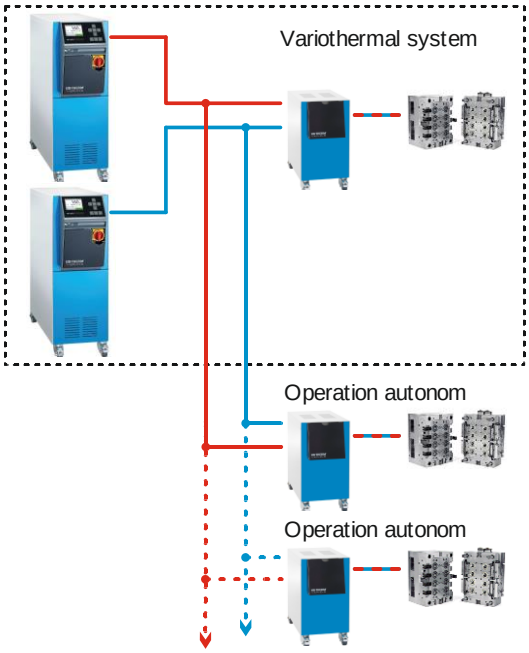
Software updates can only be performed with a Thermo-5 unit or operating module Panel-5. The switching unit must not be in autonomous operation. The contact 'Operation autonom' from the digital input of the control cable must be opened at mains on.

2.1 Use of several Vario-5 switching units in a temperature-variable system

Function

A variothermal system with two individual Thermo-5 units can be supplemented with further Vario-5 switching units. They work autonomously and cannot be operated via the variothermal system. The switching commands are issued for all switching units Vario-5 via the machine.

Principle for hydraulic connection:



2.2 Use of third-party unit/s instead of Thermo-5 units

Function

The switching unit is used for certain applications together with two temperature adjustment units. Instead of two Thermo-5 units, one or two external units can be used for this. The valve positions depending on the device operating modes (cooling, mould evacuation) are no longer possible here and control of the Vario-5 switching unit takes place only directly via the machine signals.

The two units are hydraulically coupled via the switching unit Vario-5. The system pressures of both units are nearly identical here. The following items must be observed or ensured when using third-party units:

- the system pressure control of both units must be coordinated with each other (same pressure target control).
- observe overpressure safety valve and overtemperature fuse (temperature limitation) for different unit types (max. temperature).
- do not perform any pressure relief or mould evacuation at the cold unit while the hot unit works above 100 °C (functions must be performed at the same time).
  → danger of evaporation in the hot unit
- during cooling off and/or mould evacuation, observe the position of the switching valves. The switching valve should be switched to "Vario Heating" or "Vario Cooling".
  → So that consumers and supply lines can be cooled off and drained
- for better venting of the circuits, turn on both units at the same time if possible, and set the position of the switching valve to "Vario Heating" or "Vario Cooling" (consumer circuit activated).

2.3 Test purposes

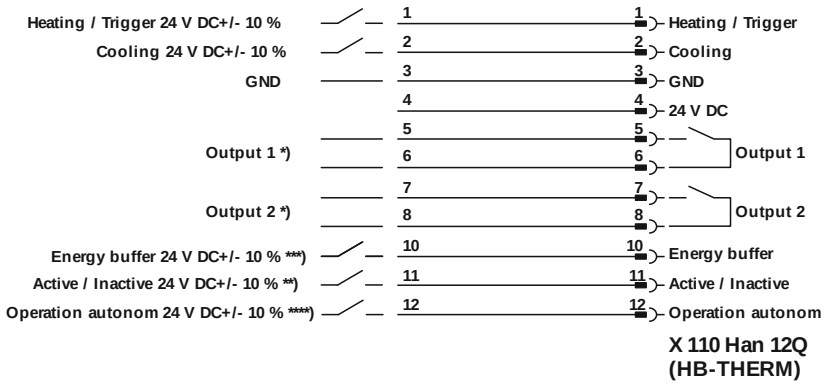
Function

In the service case, the switching unit Vario-5 can be operated autonomously for inspection of the valve movements. The connection to the hydraulics is not mandatory in this.

The valves for this are controlled via the contacts 'Heating' and 'Cooling'. The storage valve moves (closes - opens) automatically every time "Vario Heating" or "Vario Cooling" is activated. The contact 'Energy buffer' from the digital input of the control cable must be opened for this.

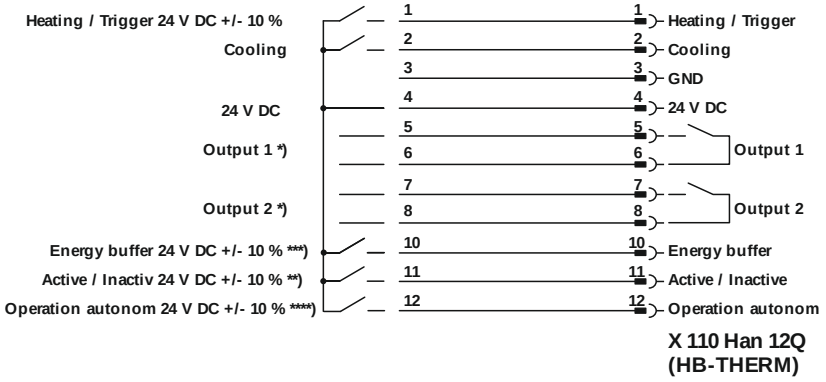
3 External control interface

Active 24 V DC signal



*) → Instruction Manual Vario-5
**) → Instruction Manual Vario-5
***) → Setting of energy buffer in autonomous operation to page 2
****) → Control of autonomous operation to page 1

Potential-free contacts



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Cable Ext. control autonom (O/ID 28125-X)